## PATENT COOPERATION TREATY

	ERNATIONAL SEARCHING AUTHORITY 0:		PCT					
	see form PCT/ISA/220		INTERNATION	EN OPINION OF THE AL SEARCHING AUTHORITY CT Rule 43 <i>bis.</i> 1)				
			Date of mailing	form PCT/ISA/210 (second sheet)				
applicant's or agent's file reference			FOR FURTHER ACTION See paragraph 2 below					
ntern	ational application No. //B2005/051012	International filing date (c 24.03.2005	day/month/year)	Priority date (day/month/year) 30.03.2004				
terr 02	national Patent Classification (IPC) or F1/01, D03D15/00, D02G3/44	both national classification	and IPC					
ilqc 10	cant NNKLIJKE PHILIPS ELECTR	ONICS N.V.						
	This opinion contains indicat	ions relating to the fol	lowing items:					
	☑ Box No. I Basis of the o	pinion						
	Box No. II		inventh	to step and industrial applicability				
	☐ Box No. iii Non-establish	ment of opinion with reg	gard to novelty, inventi-	ve step and industrial applicability				
	☐ Box No. IV Lack of unity ☐ Box No. V Reasoned stapplicability;	of invention atement under Rule 43 <i>b</i> citations and explanation	is.1(a)(i) with regard to ns supporting such sta	novelty, inventive step or industrial tement				
	Cl. Rox No. VII. Certain defects in the international application							
	☐ Box No. VIII Certain obse	rvations on the internation	onal application					
,	EUDTHER ACTION							
2.	If a demand for international preliminary examination is made, this opinion will usually be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA"). However, this does not apply where written opinion of the International Preliminary Examining Authority ("IPEA"). However, this does not apply where written opinion of the IPEA and the chosen IPEA has notifed the the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notifed the international Bureau under Rule 66.1bls(b) that written opinions of this International Searching Authority will not be so considered.  If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to							
		hove, considered to be	a written opinion of the	ents before the expiration of three				
	submit to the IPEA a written re months from the date of mailin whichever expires later.	ng of Form PCT/ISA/220	or before the expiration	n of 22 months from the priority date,				
	submit to the IPEA a written re months from the date of mailing	ng of Form PCT/ISA/220	or before the expiratio	n of 22 months from the priority date,				
3.	submit to the IPEA a written re months from the date of mailin whichever expires later.	pg of Form PCT/ISA/220	or before the expiratio	n of 22 months from the priority date,				

Name and mailing address of the ISA:

Authorized Cirio

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Ammerlahn, D

Telephone No. +49 89 2399-7028



## WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY

International application No. PCT/IB2005/051012

	Box No	
1.	the lang	gard to the <b>language</b> , this opinion has been established on the basis of the international application in guage in which it was filed, unless otherwise indicated under this item.
	☐ Th	is opinion has been established on the basis of a translation from the original language into the following aguage—, which is the language of a translation furnished for the purposes of international search and 23.1(b)).
2.	With re	egard to any <b>nucleotide and/or amino acid sequence</b> disclosed in the international application and early to the claimed invention, this opinion has been established on the basis of:
	a. type	of material:
		a sequence listing
		table(s) related to the sequence listing
	b. form	nat of material:
		in written format
		in computer readable form
	c. time	e of filing/furnishing:
		contained in the international application as filed.
		filed together with the international application in computer readable form.
		furnished subsequently to this Authority for the purposes of search.
;	ŀ	n addition, in the case that more than one version or copy of a sequence listing and/or table relating theret has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
	4. Addit	ional comments:
		·
	Box	No. II Priority
	1. 🛛	The validity of the priority claim has not been considered because the International Searching Authority does not have in its possession a copy of the earlier application whose priority has been claimed or, wher required, a translation of that earlier application. This opinion has nevertheless been established on the assumption that the relevant date (Rules 43 <i>bis</i> .1 and 64.1) is the claimed priority date.
		This opinion has been established as if no priority had been claimed due to the fact that the priority claim has been found invalid (Rules 43 <i>bis.</i> 1 and 64.1). Thus for the purposes of this opinion, the international filling date indicated above is considered to be the relevant date.
	3. Add	itional observations, if necessary:

## WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY

International application No. PCT/IB2005/051012

Box No. V Reasoned statement under Rule 43bis.1(a)(l) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)

Yes: Claims

1-38

No:

Claims

Inventive step (IS)

Yes: Claims

1-38

Claims No:

Industrial applicability (IA)

Yes: Claims

1-38

No: Claims

2. Citations and explanations

see separate sheet

#### Certain documents cited Box No. VI

1. Certain published documents (Rules 43bis.1 and 70.10) and / or

2. Non-written disclosures (Rules 43bis.1 and 70.9)

see form 210

## **Cited Documents**

D1: US-A-6 096 666 (JACHIMOWICZ ET AL), 1 August 2000;

D2: EP-A-1.207 140 (LUCENT TECHNOLOGIES INC), 22 May 2002;

D3: US-A-5 906 004 (LEBBY ET AL), 25 May 1999.

D4: EP-A-1 482 352 (AGILENT TECHNOLOGIES INC), 1 December 2004.

## Item V

- The international application concerns an optical fibre the colour of which is 1 electrically switchable; the optical fibre is suitable for inclusion in a fabric or garment.
- Closest prior art D1 discloses in Figures 3 and 4 an optical fibre comprising 2
  - an elongated core having a core axis;
  - a substance having an electrically modulatable optical characteristic, covering a b) portion of the core; and
  - an electrical stimulation means adapted to produce an electric field arranged to c) electrically induce a change in the optical characteristic of the substance, thereby changing the visual appearance of the optical fibre.
- Independent claim 1 furthermore defines that the electrical stimulation means is 3 arranged such that the electric field extends in a direction substantially parallel to the core axis or in a direction extending substantially circumferentially about the core axis.
  - Independent claim 17 furthermore defines that the electrical stimulation means comprises a first and a second electrode pair disposed in the same off-axis plane and arranged such that the electric field extends in a direction substantially parallel to the core axis or in a direction extending substantially transversely to the core axis.
- In D1, the electrodes are arranged such that the electric field is directed radially to the 4 core axis. An electrode arrangement which provides an electric field directed parallel to the core axis or in a direction extending circumferentially about the core axis is not

PCT/IB2005/051012

disclosed in the available prior art.

Figure 5B of D2 discloses an electrical stimulation means comprising two pairs of electrodes which provide an electric field extending substantially transversely to the core axis. However, these electrode pairs are arranged on a circle around the core axis. An arrangement of two electrode pairs in the same off-axis plane is not suggested by the available prior art.

- Therefore, the combination of features of claims 1 and 17 is neither known from nor suggested in the prior art and the subject-matter of claims 1 and 17 appears to be novel and inventive.
- Dependent claims 2-16 and 18-38 are directed to advantageous embodiments of the devices of claims 1 and 17 and therefore are regarded as being novel and inventive either.
- 7 The industrial applicability of claims 1-38 is self-evident.
- Independent claims 1 and 17 are not in the two-part form (Rule 6.3(b) PCT) based on document D1, and documents D1-D3 are not acknowledged in the description (Rule 5.1(a)(ii) PCT). Furthermore, reference signs to the Figures are missing in the claims (Rule 6.2(b) PCT).

### Item VI

1 Document D4 could eventually become relevant in the European Phase.

## PATENT COOPERATION TREATY

ō:	RNATIONAL SEARCHING AUTHORITY		WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY (PCT Rule 43 bis.1)  Date of malling (day/month/year) see form PCT/ISA/210 (second sheet)		
see form PCT/ISA/220					
Applicant's or agent's file reference see form PCT/ISA/220				FOR FURTHER ACTION See paragraph 2 below	
PCT	national application No. //B2005/051012		International filing date 24.03.2005		Priority date (day/month/year) 30.03.2004
iterr	national Patent Classi F1/01, D03D15/0	fication (IPC) or 0, D02G3/44	both national classification	and IPC	
ilqq 10	cant NINKLIJKE PHILI	IPS ELECTR	ONICS N.V.		
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١.	This opinion co	ntains indicat	ions relating to the fo	llowing items:	
۱.	This opinion co	ntains indicat Basis of the o		llowing items:	
١.		Basis of the o	pinion		
١.	⊠ Box No. I	Basis of the o Priority Non-establish	pinion ment of opinion with re		ive step and industrial applicability
1.	⊠ Box No. I	Basis of the o Priority Non-establish Lack of unity	pinion  ment of opinion with re of invention	gard to novelty, Invent	o novelty, inventive step or industrial
1.	Box No. I  Box No. II  Box No. III  Box No. IV  Box No. V	Basis of the o Priority Non-establish Lack of unity Reasoned sta applicability; of	pinion ment of opinion with re of invention atement under Rule 43 <i>t</i> citations and explanatio	gard to novelty, Invent	o novelty, inventive step or industrial
1.	Box No. I     Box No. II     Box No. III     Box No. IV     Box No. V      Box No. V      Box No. V	Basis of the o Priority Non-establish Lack of unity Reasoned sta applicability; of Certain docur	pinion  ment of opinion with re of invention atement under Rule 43 <i>t</i> citations and explanation	gard to novelty, invent bis.1(a)(i) with regard to ons supporting such sta	o novelty, inventive step or Industrial
l.	Box No. I     Box No. II     Box No. III     Box No. IV     Box No. V      Box No. VI     Box No. VI     Box No. VI	Basis of the o Priority Non-establish Lack of unity of Reasoned sta applicability; of Certain docur Certain defect	pinion  ment of opinion with re of invention atement under Rule 435 citations and explanation ments cited ts in the international a	gard to novelty, invent ois.1(a)(i) with regard to ons supporting such sta	o novelty, inventive step or Industrial
	Box No. I Box No. II Box No. II Box No. IV Box No. V Box No. V Box No. VI Box No. VII Box No. VIII	Basis of the o Priority Non-establish Lack of unity of Reasoned sta applicability; of Certain docur Certain defect Certain observed	pinion  ment of opinion with re of invention atement under Rule 43 <i>t</i> citations and explanation	gard to novelty, invent ois.1(a)(i) with regard to ons supporting such sta	o novelty, inventive step or industrial
2.	Box No. I  Box No. II  Box No. III  Box No. IV  Box No. V  Box No. VI  Box No. VIII  Box No. VIII  FURTHER ACTI  If a demand for I written opinion of the applicant che land in the so co	Basis of the o Priority Non-establish Lack of unity Reasoned sta applicability; Certain docur Certain defect Certain observation International profithe Internatio ooses an Authoreau under Rulinsidered.	ment of opinion with recoffinvention atement under Rule 43th citations and explanation ments cited ats in the international actions on the international actions on the international actions on the international actions on the international preliminary examination in all Preliminary Examination in the other than this one e 66.1 bls(b) that written	gard to novelty, Inventous, 1(a)(i) with regard to see supporting such states and application application sometimes and the see see see see see see see see see s	o novelty, inventive step or industrial atement  vill usually be considered to be a . However, this does not apply where he chosen IPEA has notifed the national Searching Authority
2.	Box No. I  Box No. II  Box No. II  Box No. IV  Box No. V  Box No. VI  Box No. VIII  Box No. VIII  FURTHER ACTI  If a demand for I written opinion of the applicant che international Bur will not be so co	Basis of the o Priority Non-establish Lack of unity Reasoned sta applicability; o Certain docur Certain defect Certain observational International profithe Internation cooses an Authoreau under Rule Insidered.  The provided at the certain readily as provided at	ment of opinion with re of invention stement under Rule 43 <i>t</i> citations and explanation ments cited its in the international a reations on the international eliminary examination i mal Preliminary Examination ity ority other than this one e 66.1 <i>bis</i> (b) that written	gard to novelty, Inventors.1(a)(i) with regard to the supporting such states a supporting such states application application application with a supporting such states and the supporting such such a written opinion of the supporting supportin	o novelty, inventive step or industrial atement  vill usually be considered to be a  However, this does not apply where
	Box No. I Box No. II Box No. II Box No. IV Box No. V Box No. VI Box No. VIII Box No. VIII FURTHER ACTI If a demand for I written opinion o the applicant che international Burwill not be so co	Basis of the o Priority Non-establish Lack of unity Reasoned sta applicability; o Certain docur Certain defect Certain observers ION International profithe Internation coses an Authoreau under Rule insidered.  as provided a EA a written ree date of mailinges later.	ment of opinion with report invention stement under Rule 43 to citations and explanation ments cited to the international and any ations on the international Preliminary Examination in all Preliminary Examination of the control of	gard to novelty, Inventors.1(a)(i) with regard to the supporting such states a supporting such states application application application with a supporting such states and the supporting such such a written opinion of the supporting supportin	o novelty, inventive step or industrial atement  vill usually be considered to be a . However, this does not apply where ne chosen IPEA has notifed the national Searching Authority  e IPEA, the applicant is invited to ponts, before the expiration of three
	Box No. I Box No. II Box No. II Box No. IV Box No. V Box No. VI Box No. VII Box No. VIII FURTHER ACTI If a demand for I written opinion of the applicant che international Burwill not be so collif this opinion is submit to the IP months from the whichever expir	Basis of the o Priority Non-establish Lack of unity Reasoned sta applicability; Certain docur Certain defect Certain observations International profithe Internation reau under Rulensidered.  , as provided a EA a written real edate of mailingles later.  ons, see Form	ment of opinion with report invention stement under Rule 43 to citations and explanation ments cited to the international and any ations on the international Preliminary Examination in all Preliminary Examination of the control of	gard to novelty, Inventors.1(a)(i) with regard to the supporting such states a supporting such states application application application with a supporting such states and the supporting such such a written opinion of the supporting supportin	o novelty, inventive step or industrial atement  vill usually be considered to be a . However, this does not apply where ne chosen IPEA has notifed the national Searching Authority  e IPEA, the applicant is invited to ponts, before the expiration of three

Name and mailing address of the ISA:

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European Patent Office D-80298 Munich Tel. +49 89 2399 - 0 Tx: 523656 epmu d Fax: +49 89 2399 - 4465 Authorized Cines.

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# WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY

International application No. PCT/IB2005/051012

	Box No	
1.	the lang	gard to the <b>language</b> , this opinion has been established on the basis of the international application in guage in which it was filed, unless otherwise indicated under this item.
	lar (ui	is opinion has been established on the basis of a translation from the original language into the following aguage , which is the language of a translation furnished for the purposes of international search and results and 23.1(b)).
2.	With re	gard to any <b>nucleotide and/or amino acid sequence</b> disclosed in the international application and early to the claimed invention, this opinion has been established on the basis of:
	a. type	of material:
		a sequence listing
		table(s) related to the sequence listing
	b. form	nat of material:
		in written format
		in computer readable form
	c. time	e of filing/furnishing:
		contained in the international application as filed.
		filed together with the international application in computer readable form.
		furnished subsequently to this Authority for the purposes of search.
3.	h	n addition, in the case that more than one version or copy of a sequence listing and/or table relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional hopies is identical to that in the application as filed or does not go beyond the application as filed, as hoppropriate, were furnished.
4	. Addit	ional comments:
-	Box	No. II Priority
1		The validity of the priority claim has not been considered because the International Searching Authority does not have in its possession a copy of the earlier application whose priority has been claimed or, where required, a translation of that earlier application. This opinion has nevertheless been established on the assumption that the relevant date (Rules 43bis.1 and 64.1) is the claimed priority date.
2	2. 🗆	This opinion has been established as if no priority had been claimed due to the fact that the priority claim has been found invalid (Rules 43 <i>bis</i> .1 and 64.1). Thus for the purposes of this opinion, the international filing date indicated above is considered to be the relevant date.
	2 Δddi	tional observations, if necessary:

## WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY

International application No. PCT/IB2005/051012

Box No. V Reasoned statement under Rule 43bis.1(a)(l) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)

Yes: Claims

1-38

No:

Claims

Inventive step (IS)

Yes: Claims

1-38

No: Claims

Industrial applicability (IA)

Yes: Claims

1-38

No: Claims

2. Citations and explanations

see separate sheet

## Box No. VI Certain documents cited

1. Certain published documents (Rules 43*bis*.1 and 70.10) and /or

2. Non-written disclosures (Rules 43bis.1 and 70.9)

see form 210

## **Cited Documents**

D1: US-A-6 096 666 (JACHIMOWICZ ET AL), 1 August 2000;

D2: EP-A-1 207 140 (LUCENT TECHNOLOGIES INC), 22 May 2002;

D3: US-A-5 906 004 (LEBBY ET AL), 25 May 1999.

D4: EP-A-1 482 352 (AGILENT TECHNOLOGIES INC), 1 December 2004.

#### Item V

- The international application concerns an optical fibre the colour of which is electrically switchable; the optical fibre is suitable for inclusion in a fabric or garment.
- 2 Closest prior art D1 discloses in Figures 3 and 4 an optical fibre comprising
  - a) an elongated core having a core axis;
  - b) a substance having an electrically modulatable optical characteristic, covering a portion of the core; and
  - an electrical stimulation means adapted to produce an electric field arranged to electrically induce a change in the optical characteristic of the substance, thereby changing the visual appearance of the optical fibre.
- Independent claim 1 furthermore defines that the electrical stimulation means is arranged such that the electric field extends in a direction substantially parallel to the core axis or in a direction extending substantially circumferentially about the core axis.
  - Independent claim 17 furthermore defines that the electrical stimulation means comprises a first and a second electrode pair disposed in the same off-axis plane and arranged such that the electric field extends in a direction substantially parallel to the core axis or in a direction extending substantially transversely to the core axis.
- In D1, the electrodes are arranged such that the electric field is directed radially to the core axis. An electrode arrangement which provides an electric field directed parallel to the core axis or in a direction extending circumferentially about the core axis is not

disclosed in the available prior art.

Figure 5B of D2 discloses an electrical stimulation means comprising two pairs of electrodes which provide an electric field extending substantially transversely to the core axis. However, these electrode pairs are arranged on a circle around the core axis. An arrangement of two electrode pairs in the same off-axis plane is not suggested by the available prior art.

- Therefore, the combination of features of claims 1 and 17 is neither known from nor suggested in the prior art and the subject-matter of claims 1 and 17 appears to be novel and inventive.
- Dependent claims 2-16 and 18-38 are directed to advantageous embodiments of the devices of claims 1 and 17 and therefore are regarded as being novel and inventive either.
- 7 The industrial applicability of claims 1-38 is self-evident.
- Independent claims 1 and 17 are not in the two-part form (Rule 6.3(b) PCT) based on document D1, and documents D1-D3 are not acknowledged in the description (Rule 5.1(a)(ii) PCT). Furthermore, reference signs to the Figures are missing in the claims (Rule 6.2(b) PCT).

### Item VI

1 Document D4 could eventually become relevant in the European Phase.